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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SHAH, SAMIR M	

ART UNIT	PAPER NUMBER
2856	

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12/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,105	CRICKMORE ET AL.	
	Examiner	Art Unit	
	SAMIR M. SHAH	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,17 and 20-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,17 and 20-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 June 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/26/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 3, 8, 11-13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) As to claim 2, the limitation "compression of the cylinder by the seismic mass increases stress in the optical fibre" is not properly describe in the specification and is therefore indefinite as to what exact structural features of the apparatus are responsible for the function of increasing stress in the optical fibre. How does compression of the cylinder by the seismic mass increase stress in the optical fibre?

(b) As to claim 3, the recitation, "seismic mass is surmounted with a disc shaped portion" is indefinite because the structure is not sufficiently described in the specification and thereby renders ambiguity to the claim. What exactly is meant by the seismic mass being surmounted with a disc shaped portion?

(c) As to claim 8, the recitation, "the base plate is integral with a platform or structure" is indefinite because the structure is not sufficiently described in the specification and thereby renders ambiguity to the claim. How exactly is the base plate

integral with a platform or structure? What type of a structure is being referred to? What kind of a platform is being recited?

(d) As to claims 11 and 12, the phrase "is arranged in operation to bear on" renders ambiguity to these claims. The specification does not provide sufficient description and these claims are therefore indefinite as to what exact structural features of the apparatus are responsible for the function of circumferentially located bearer member being arranged in operation to bear on... as recited in claims 11 and 12. What exactly is meant by the phrase "is arranged in operation to bear on".

(e) As to claim 13, the recitation, “surface…shaped so as to prevent the one or more cylinders deforming inwardly under axial compression” renders ambiguity to the claim due to the lack of sufficient description in the specification. Therefore, it is indefinite as to what exact structural features of the apparatus are responsible for the function of preventing the one or more cylinders from deforming inwardly under axial compression. What exactly is meant by “shaped so as to prevent…cylinder deforming inwardly under axial compression”? What exact shape is being referred to?

(f) As to claim 15, the phrase "axial displacement of the seismic mass deforming the cylinder so as to vary the stress induced in the optical fibre" renders ambiguity to the claim due the lack of sufficient description in the specification. It is indefinite as to what exact structural features of the apparatus are responsible for the function of “deforming

the cylinder so as to vary the stress induced in the optical fibre". What exactly is meant by varying the stress induced in the optical fibre? How exactly is the cylinder deformed to achieve this?

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-15, 17 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Thomas (International Patent Application WO 03/081186 A2 henceforth “Thomas”).

(a) As to claim 1, Thomas discloses a fibre optic accelerometer (10) comprising a seismic mass (23) coaxially constrained within a cylinder (12) of compliant material, the cylinder (12) being circumferentially wound with optical fibre (11) (figures 1-7; page 2, line 18 - page 3, line 3; page 6, line 6 - page 8, line 9).

(b) As to claim 2, Thomas discloses that compression of the cylinder (12) by the seismic mass (23) increases stress in the optical fibre (11) (figures 1-7; page 7, line 12-22).

(c) As to claim 3, Thomas discloses that the seismic mass (23) is surmounted with a disc shaped portion (14) (figures 1-7; page 6, lines 6-20).

(d) As to claim 4, Thomas discloses that the seismic mass (23) is secured by a tension member (21) to a base plate (25) (figures 1-7; page 6, lines 6-20).

(e) As to claim 5, Thomas discloses that a spacer (22) is provided between the cylinder (12) and the base plate (25) (figures 1-7; page 6, lines 6-31).

(f) As to claim 6, Thomas discloses that the spacer (22) is integral with the base plate (25) (figures 1-7; page 6, lines 6-31).

(g) As to claim 7, Thomas discloses the optical fibre (11) being wound in a single layer (figures 1-7; page 6, lines 6-31).

(h) As to claim 8, Thomas discloses the base plate (25) being integral with a platform or structure (figure 2; page 2, lines 18-20; page 6, lines 6-31).

(i) As to claim 9, Thomas discloses the seismic mass (23) being coaxially constrained within first and second cylinders (13) of compliant material, each cylinder (13) being circumferentially wound with optical fibre (11) (figures 5, 6; page 6, line 22 - page 7, line 28).

(j) As to claim 10, Thomas discloses the seismic mass (23) comprising a first circumferentially located bearer member (14) arranged in operation to bear on an end of at least one of the compliant cylinders (13) (figures 1-7; page 6, line 22 - page 7, line 28).

(k) As to claim 11, Thomas discloses the first circumferentially located bearer member (14) being arranged in operation to bear on respective ends of both of the compliant cylinders (13) (figures 1-7; page 6, line 22 - page 7, line 28).

(l) As to claim 12, Thomas discloses a second circumferentially located bearer member (14) arranged in operation to bear on an end of a second of the compliant cylinders (13) (figures 1-7; page 6, line 22 - page 7, line 28).

(m) As to claim 13, Thomas discloses the outer surface of the seismic mass (23) and the inner surface of the one or more compliant cylinders (13) are shaped so as to prevent the one or more cylinders (13) deforming inwardly under axial compression (figures 1-7; page 6, line 22 - page 7, line 28).

(n) As to claim 14, Thomas discloses an optical interferometer comprising an accelerometer (figures 8, 9; page 10, lines 1-31).

(o) As to claim 15, Thomas discloses a method of measuring acceleration comprising providing a seismic mass (23) coaxially constrained within a cylinder (12) of compliant material, the cylinder (12) being circumferentially wound with optical fibre (11), axial displacement of the seismic mass (23) deforming the cylinder (12) so as to vary the stress induced in the optical fibre (11) (figures 1-7; page 2, line 18 - page 3, line 3; page 6, line 6 - page 8, line 9).

(p) As to claim 17, Thomas discloses the compression of the cylinder (12) by the seismic mass (23) increasing stress in the optical fibre (11) (figures 1-7; page 6, line 6-31).

(q) As to claim 20, Thomas discloses the compliant material being rubber like (figures 1-7; page 6, line 6 - page 8, line 32).

(r) As to claim 21, Thomas discloses a fibre optic accelerometer (10) comprising a body of compliant material having an internal cavity extending in an axial direction (figures 1-7; page 8, lines 5-9);

optical fibre (11) wound circumferentially around said body (figures 1-7; page 6, lines 6-31); and

a seismic mass (23) located within said cavity, wherein the internal surface of said cavity is constrained against radial displacement (figures 1-7; page 6, line 6 - page 8, line 9).

(s) As to claim 22, Thomas discloses the internal surface of the cavity being constrained by the seismic mass (23) (figures 1-7; page 6, line 6 - page 8, line 9).

Conclusion

5. The prior art made of record and not relied upon, cited in the attached 892 form, is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samir M. Shah whose telephone number is (571) 272-2671. The examiner can normally be reached on Monday-Friday 9:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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12/20/2008
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